

**Departures 10L and 10R.** All aircraft departing these runways should maintain runway heading until above Southland Mall (approximately one-half mile from the airport boundary). Runway 10L is closed when the tower is not in operation.

**Touch-and-go and Stop-and-go procedures are prohibited between 9:00 p.m. and 7:00 a.m. Monday through Saturday.** Touch-and-go and stop-and-go procedures are prohibited on both runways before 10:00 a.m. on Sundays and/or holidays.

In addition to the procedures listed above, HWD recommends that pilots avoid overflying residential neighborhoods, gaining as much altitude as quickly as practical, and adjusting the propeller angle and engine speed to reduce engine and propeller noise.

## 3.6 Proposed Airfield Facility Improvements<sup>1</sup>

### 3.6.1 Airfield

Based on existing and forecast operational levels, additional airfield capacity is not needed, and no new runways are needed. The *Master Plan* proposes designation of the existing runway 28L entrance taxiway as part of the runway and using this pavement for departures to the northwest, extension of runway 28R 250 feet southwest, relocation of taxiway Z, construction of a new exit taxiway, installation of additional lighting and construction of a noise wall for Runway 10-L.

### 3.6.2 Building Area

It is estimated that HWD will require up to an additional 176,000 square feet of aircraft storage hangar space in the future. This includes conventional hangar areas, including executive hangars, and T-Hangar area. The *Master Plan* also proposes a single location for transient aircraft passengers at a public terminal building at the Airport. The estimated long-term need is an 11,800 square foot public terminal building. Other landside facilities planned include a new helipad with helicopter parking positions and service roads.

## 3.7 Airport Planning Documents

### 3.7.1 Hayward Executive Airport Master Plan

The Hayward Executive Airport *Master Plan* was adopted by the City of Hayward in April 2000. The plan includes an inventory of existing facilities and activity at the airport, forecasts of future airport activity, a discussion of aviation facility requirements, a presentation of development alternatives, a recommended airport master plan concept, a financial plan, and environmental reconnaissance.

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<sup>1</sup> Airport facility improvements are described in greater detail in the *Hayward Executive Airport Master Plan*.

### 3.7.2 Strategic Business Plan for Hayward Executive Airport

The *Strategic Business Plan for Hayward Executive Airport* was completed in 1997. The plan was developed to identify economic development opportunities for the City of Hayward at the airport and to improve the financial position of the airport and its businesses and industries. The plan recommended updating the *Master Plan*, evaluating the impacts of the 1992 Performance-Based Noise Ordinance, preparing a marketing plan for the airport, expanding aviation development, expanding non-aviation development, attracting additional general aviation services, developing a general aviation terminal complex, and preparing a lease review and evaluation.

### 3.7.3 FAR Part 150 Study

The City of Hayward developed and adopted a FAR Part 150 Study in 1988, establishing procedures for airport noise compatibility planning. The plan recommended establishing departure and approach procedures, developing a program to provide pilot and community awareness, constructing a noise berm at the runway 28L end, relocating the Runway 28L run-up area, providing additional exit taxiways, and acquiring an Automated Surface Observation System (ASOS). These recommendations have been implemented.

## 3.8 Existing and Future Airport Activity

The Hayward Executive Airport *Master Plan* outlines existing and forecasted activity at the airport. General aviation airports typically measure airport activity using the number of based aircraft and total annual operations (takeoffs and landings). Since 1989, general aviation operations have accounted for more than 98 percent of all operations at the airport.

### 3.8.1 Fleet Mix

The existing based aircraft fleet mix is comprised primarily of single-engine piston aircraft, but also includes multi-engine piston, turboprop, turbojet, and helicopter aircraft. The trend is toward a greater percentage of larger, more sophisticated turboprop, turbojet, and helicopters. Single-engine piston and multi-engine piston aircraft are projected to grow, but at slower rates than turbine-powered and helicopter aircraft. Table 3-2 presents the existing and forecasted fleet mix for based aircraft at HWD.

### 3.8.2 Operations

Projections of aircraft operations at HWD are based on the number of operations per based aircraft and historical data. Historically, based operations have made up 50 percent of total annual operations or about 300 to 400 operations per based aircraft. After increasing between 1984 and 1989, total based aircraft at HWD gradually declined to approximately 423 aircraft in 1998. The number of based aircraft is estimated to grow by 1.4 percent annually through 2010 and then by 1.1 percent annually to 2020 (see Table 3-3). The number of based aircraft in 2005 was 477.

The projected annual operations presented in Table 3-3 represent a future scenario between increasing operations per based aircraft and static operations per based aircraft. This planning forecast projects annual operations growing at an annual rate of 1.7 percent. It is likely that based aircraft levels will fluctuate above and below the levels provided in the planning forecast.

### 3.8.3 Runway Use

Most of the departures at HWD are to the west on either Runway 28L or Runway 28R. Table 3-4 provides a summary of runway use at HWD.

**TABLE 3-2  
EXISTING AND FORECAST BASED FLEET MIX**

Aircraft Type	Percentage of Based Fleet	
	1998	2020
Single Engine Piston	85.8%	82.2%
Multi-Engine Piston	9.0%	9.7%
Turboprop	2.4%	3.9%
Jet	1.6%	2.5%
Helicopter	1.2%	1.7%

Source: Coffman Associates, Inc.

**TABLE 3-3  
PROJECTED BASED AIRCRAFT BY AIRCRAFT TYPE: 1998 THROUGH 2025**

Year	Total	Single Engine	Multi-engine	Turboprop	Jet	Helicopter
1998 (actual)	423	363	38	10	7	6
2005 (actual)	477	387	42	12	17	19
2010	475	401	44	14	9	7
2015	497	413	47	18	11	8
2020	518	426	50	20	13	9
2025 <sup>a</sup>	544	440	54	23	16	11

<sup>a</sup> Extrapolated

Source: Coffman Associates, Inc.

**TABLE 3-4  
RUNWAY USE PERCENTAGES AT HWD**

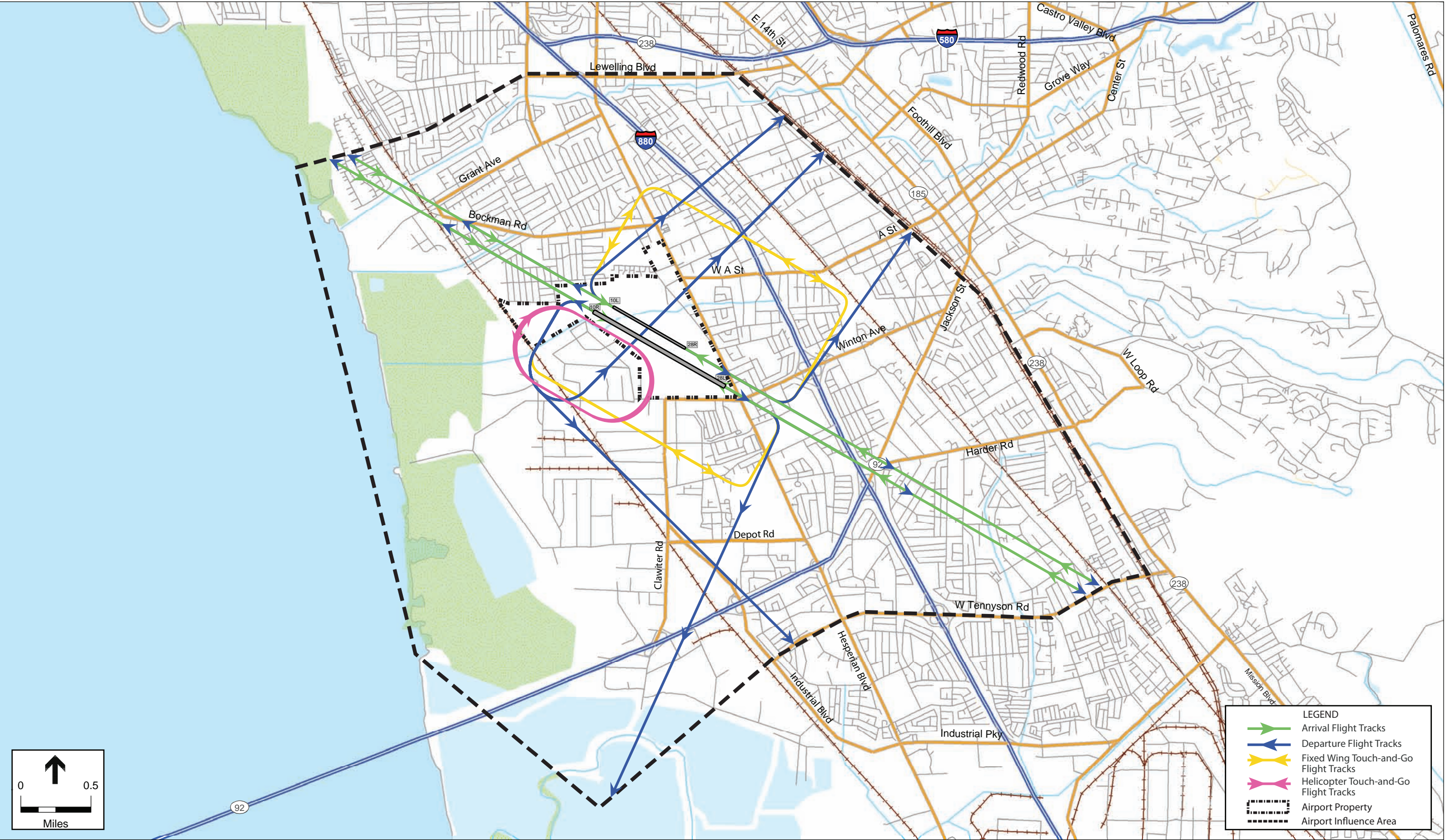
<b>Runway</b>	<b>Single Engine Piston</b>	<b>Multi-Engine Piston</b>	<b>Turboprop</b>	<b>Business Jet</b>
10L	2.5%	0.0%	0.0%	0.0%
10R	2.5%	5.0%	5.0%	5.0%
28L	30.0%	55.0%	95.0%	95.0%
28R	65.0%	40.0%	0.0%	0.0%
<b>TOTAL</b>				

SOURCE: FAA; Coffman Associates, Inc.

### 3.8.4 Flight Tracks

The flight tracks for aircraft arriving to and departing from HWD are depicted on Figure 3-7.









## 3.9 Land Use Compatibility Zones

The zones established by the policies set forth in Section 3.10 reflect a combination of three broad compatibility concerns (noise, safety, and airspace protection) arising from aircraft operations and how they affect existing and future land uses around Hayward Executive Airport. Figure 3-8 depicts all of the compatibility factors, layered, so that their relationship to the individual compatibility zones can be visualized.

### 3.9.1 Compatibility Zone Delineation

A total of five different compatibility zone configurations have been created based upon supporting noise, safety, and airspace protection compatibility criteria (see Figure 3-9). The basic criteria applicable to the review of proposed land use actions in these compatibility zones surrounding HWD is set forth in Table 3-5. For the purposes of reviewing proposed amendments to county or city land use plans and zoning ordinances, as well as in the review of most individual development proposals, the criteria in this table is expected to serve as a sufficient guide. However, certain complex land use actions may require more extensive review.

The following is a list of the five compatibility zones for Hayward Executive Airport:

**Compatibility Zone A.** *Zone A* encompasses the runway surfaces and the runway protection zones at each of the four runway ends. The RPZs extend 1,700 and 1,000 feet beyond the primary surface of the main and secondary runways, respectively. Laterally, the zone boundaries follow the building restriction lines indicated on the adopted airport layout plan. This zone also includes the 75 CNEL contour line, and a majority of the 70 CNEL line.

**Compatibility Zone B1.** The length of *Zone B1* includes a majority of the 65-CNEL contour line, as well as the sideline protection (measured approximately 500' from the side edge of each runway) and inner safety zones for runways 28R and 28L. *Zone B1* extends further to the southeast due to the fact that a majority of operations at HWD occur on runways 28R and 28L (see Table 3-4).

**Compatibility Zone B2.** *Zone B2* includes the inner turning zones for both runways (measured at a 30° angle, 4000' from the end of runways 10R and 28L). This zone encompasses the majority of touch and go operations from Runway 10L/28R, and all of the touch and go operations for runway 10R/28L, as well as all helicopter touch and go operations.

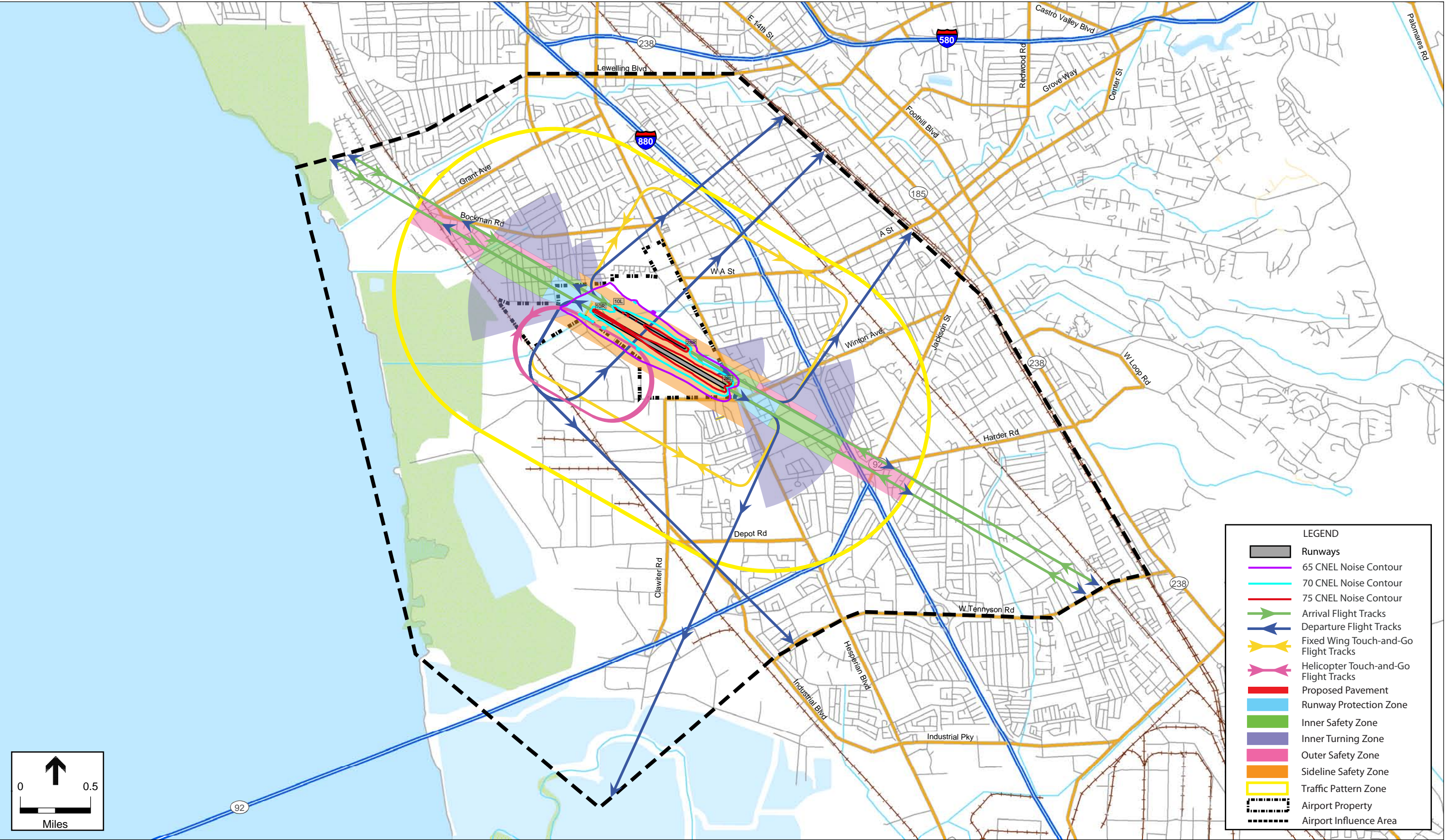
**Compatibility Zone C.** *Zone C* contains the principle traffic pattern for each runway. This is measured at 6000' from the center-line of each runway, and contains the remainder of the touch and go operations from Runway 10L/28R.

**Compatibility Zone D.** *Zone D* includes all other locations within the HWD airport influence area delineated in accordance with Federal Aviation Regulations Part 77. Limitations on the height of structures are the only compatibility factors within this zone.

Insert Table 3-5

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Insert Figure 3-9: Compatibility Zones (11x17)

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Back of Figure 3-9 (11x17)

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## 3.10 Compatibility Factors and Criteria

The airport land use compatibility concerns of the ALUC fall under three broad categories: 1) Noise – as defined by cumulative noise exposure contours describing noise from aircraft operations near the airport; 2) Safety – as described from the perspective of minimizing the risks to people on the ground and those traveling by air from aircraft accidents beyond the runway environment; and 3) Airspace Protection – accomplished by imposing limits on the height of structures and other objects in the airport vicinity and restrictions on other uses which pose potential hazards to flight.

For the purposes of reviewing proposed amendments to county or city land use plans and zoning ordinances, as well as in the review of individual development proposals, the criteria set forth is anticipated to suffice. Certain complex land uses actions, however, may require more intensive review. The policies set forth in Chapter 2 of this document may also be used to clarify or supplement the review of such actions.

### 3.10-1 Noise

#### 3.10-1.1 Projected Noise Levels

The evaluation of airport/land use noise compatibility shall consider the future Community Noise Equivalent Level (CNEL) contours of Hayward Executive Airport. These contours are calculated based upon aircraft activity forecasts that are set forth in the *Master Plan* or that are considered by the ALUC to be plausible.

The *Hayward Executive Airport Master Plan* evaluated potential changes in aircraft noise at HWD and found that there would be no substantial changes in aircraft noise over the lifetime of the *Master Plan* (through 2020). Figure 3-10 and Figure 3-11 show the 2005 and 2020 noise contours at HWD, respectively. These noise contours shall be used in determining compliance with the criteria set forth in this section. The ALUC, or the entities that operate airports in Alameda County, should periodically review the projected noise contours and update the noise contours, if appropriate.

#### 3.10-1.2 Application of Noise Contours

The locations of CNEL contours are among the factors used to define compatibility zone boundaries and criteria. It is intended that noise compatibility criteria be applied at the general plan, specific plan, or other broad-scale level. Because of the inherent variability of flight paths and other factors that influence noise emissions, the depicted contour boundaries are not absolute determinants of the compatibility or incompatibility of a given land use. Noise contours can only quantify noise impacts in a general manner; except on large parcels or blocks of land (sites large enough to have 3 dB or more of variation in CNELs), they should not be used as site design criteria. (Note, though, that the airport noise contours set forth in this Plan are to be used as the basis for determining compliance with interior noise level criteria as listed in Policy 3.10-1.5.)

### **3.10-1.3 Noise Exposure in Residential Areas**

The maximum CNEL considered normally acceptable for residential uses in the vicinity of HWD is 55 dB. Due to the existing urbanized nature of the land uses in the vicinity of HWD, the equivalent criterion for residential areas is 65 CNEL.<sup>2</sup>

### **3.10-1.4 Noise Exposure for Other Land Uses**

Noise level compatibility standards for other types of land uses shall be applied in the same manner as the above residential noise level criteria. The extent of outdoor activity associated with a particular land use is an important factor to be considered in evaluating its compatibility with airport noise, particularly for those uses listed as “marginally acceptable.”

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<sup>2</sup> *California Airport Land Use Planning Handbook*, January 2002, Table 7B.